California's Looming Water Crisis

A Status Report

E—038109

California's Looming Water Crisis: A Status Report

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Overview

In a state known for its historic water wars, the past decade has been extraordinarily tumultuous for California. A decade ago California's economy and environment were both in jeopardy from a water system in conflict. Today we have a clear policy choice: continued conflict or recovery for both California's economy and environment..

The late 1980s was the last period of "business as usual" for California water interests. After years of neglect, the environment was in serious decline and California no longer had a viable long-term plan for meeting its water supply, water quality and environmental needs.

The 1990s have witnessed a historically unprecedented environmental restoration effort, and the fisheries are rebounding.

- More than 1.5 million acre-feet of additional water has been dedicated for environmental purposes.
- $2 billion dollars has been earmarked for environmental restoration projects. To date more than 250 restoration projects are being implemented, promising dramatic improvements for fish and wildlife.

Unfortunately Californians have been forced to play a zero-sum game. Water gains for fish have translated into water loss for the

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economy. Despite the promise of regulatory certainty of the historic 1994 Bay-Delta Accord, water supplies for California's urban and agricultural customers continue to decline.

- Unless action is taken immediately, the next drought could literally dry up major portions of California's agricultural economy, with no supplies available for extended periods.
- Even under normal weather conditions, large portions of the Central Valley will receive only barely half of their historic supplies.
- In the urban economy, the Silicon Valley could face a double hit with substantial additional losses in both state and federal sources of supply.

For urban water users Delta water quality is currently inadequate, containing high concentrations of salts and organic compounds that threaten public health and water management efforts. Recent actions to protect fisheries move water quality in the wrong direction, resulting in further water quality degradation. Unless this trend is reversed, public health and water quality objectives cannot be met and could further increase demands on the Delta.

California is at risk of trading one crisis for another. While we have risen to the challenge of the environmental crisis of the 1980s, we have not taken the necessary actions to avert a looming water quality and supply crisis.

Substantial resources are already in place to help stem this crisis, including a proposed $1.97 billion water bond on the March 2000 ballot.

State and federal leaders must immediately commit to a program which expands system capacity to assure environmental and economic balance for California in the 21st Century.

A Snapshot of the Decade's Key Water Events

SAFE DRINKING WATER ACT:
THM Standard undergoes review

ENDANGERED SPECIES ACT:
Winter-Run Chinook Salmon listed

STATE DROUGHT WATER BANK:
State Acquires 820 TAF of Market Water

CENTRAL VALLEY PROJECT IMPROVEMENT ACT:
Bill changes project purpose to include environmental restoration efforts and opens the door for water marketing

EXTENDED DROUGHT - SIX CONSECUTIVE DRY YEARS

86 wet
87 dry
88 dry
89 dry
90 dry
91 dry
92 dry

STATE WATER RESOURCES CONTROL BOARD
Bay-Delta Water Quality & Water Rights Proceedings begin

WATER SHORTAGES:
State Water Project - Farmers only get 50% of requested supplies

SEVERE WATER SHORTAGES:
State Water Project - Farmers get no water deliveries.
Cities get only 30% of requested supplies

END OF DROUGHT DECLARED

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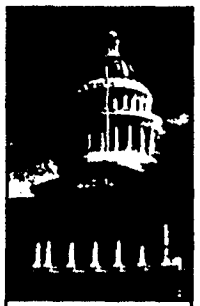
BAY-DELTA ACCORD
Governor Wilson & Interior Secretary Babbitt co-sign agreement among broad array of Bay-Delta interests. Agreement promises environmental restoration & water supply certainty

ENDANGERED SPECIES ACT:
Delta Smelt listed

SINGLE WET YEAR

SINGLE DRY YEAR



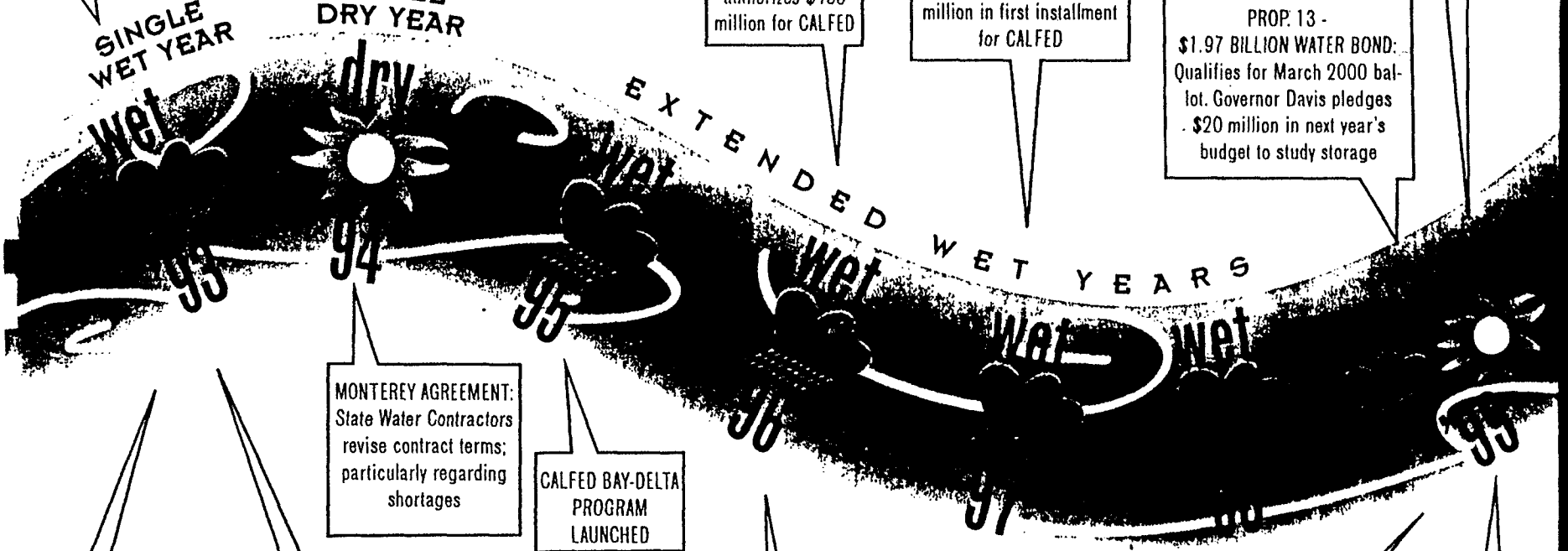
FEDERAL FUNDING:
Congress authorizes $430 million for CALFED

ECOSYSTEM RESTORATION:
Over $84 million in projects are funded

FEDERAL FUNDING:
Congress appropriates $85 million in first installment for CALFED

BABBITT/DAVIS:
Pledge to develop framework for ISI & EWA

PROP. 13 -
$1.97 BILLION WATER BOND:
Qualifies for March 2000 ballot. Governor Davis pledges $20 million in next year's budget to study storage



CLEAN WATER ACT:
U.S.EPA proposes costly water quality standards for Bay-Delta which could reduce supplies by up to 4 MAF

Water users propose alternative water quality standards with dramatically reduced impacts

MONTEREY AGREEMENT:
State Water Contractors revise contract terms; particularly regarding shortages

CALFED BAY-DELTA PROGRAM LAUNCHED

YES VOTE ON PROP. 204
California voters approve $995 million water bond

CVPIA IMPLEMENTATION:
Interior interprets CVPIA. CVP contractors and environmentalists sue

CVPIA IMPLEMENTATION:
Interior revises program with dramatically higher water supply costs

CALFED PREFERRED ALTERNATIVE:
Framework released

CALFED DRAFT PEIR RELEASED

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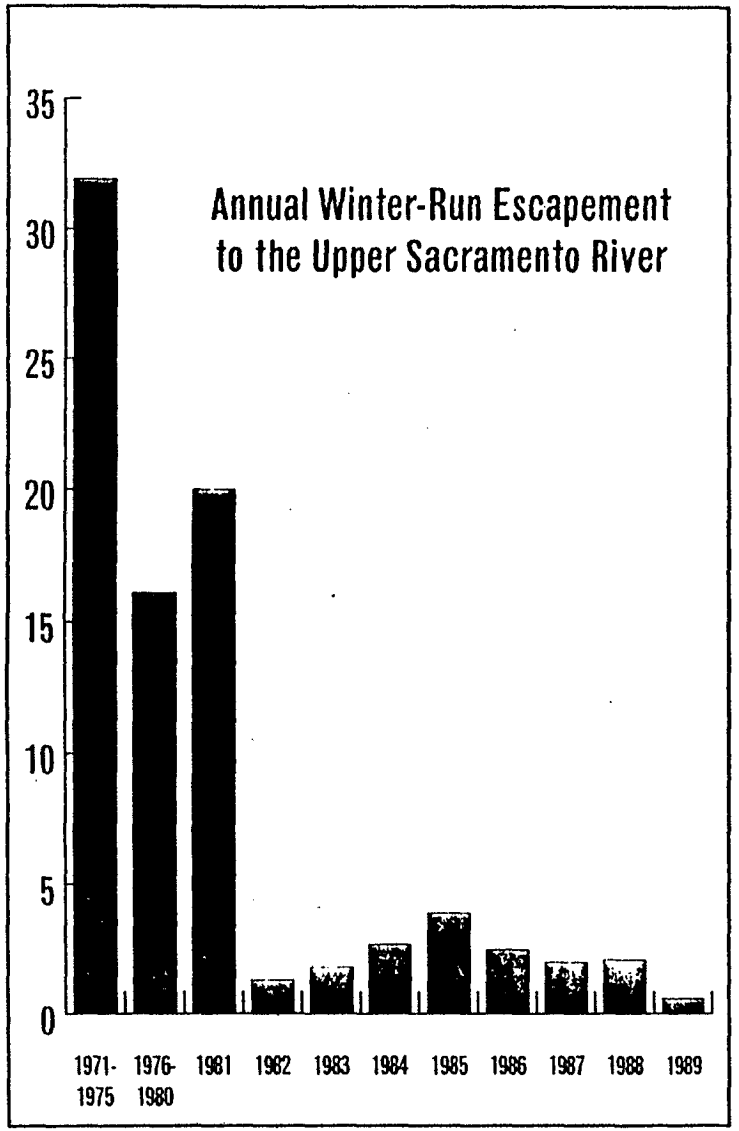
1989: A Water System On The Edge

1989 was the last year of "business as usual" in California water operations. Solutions of past decades had been abandoned. The state faced new problems on every front.



- Local water suppliers would soon face severe shortages despite investments to stretch existing supplies.
- Winter-run Chinook salmon were the first Delta fish listed under the Endangered Species Act. Other listings would come later.
- Regulators increased restrictions on Delta water projects to protect fish.
- *California no longer had a viable long-term water supply plan.*

Pardee Reservoir during severe drought.

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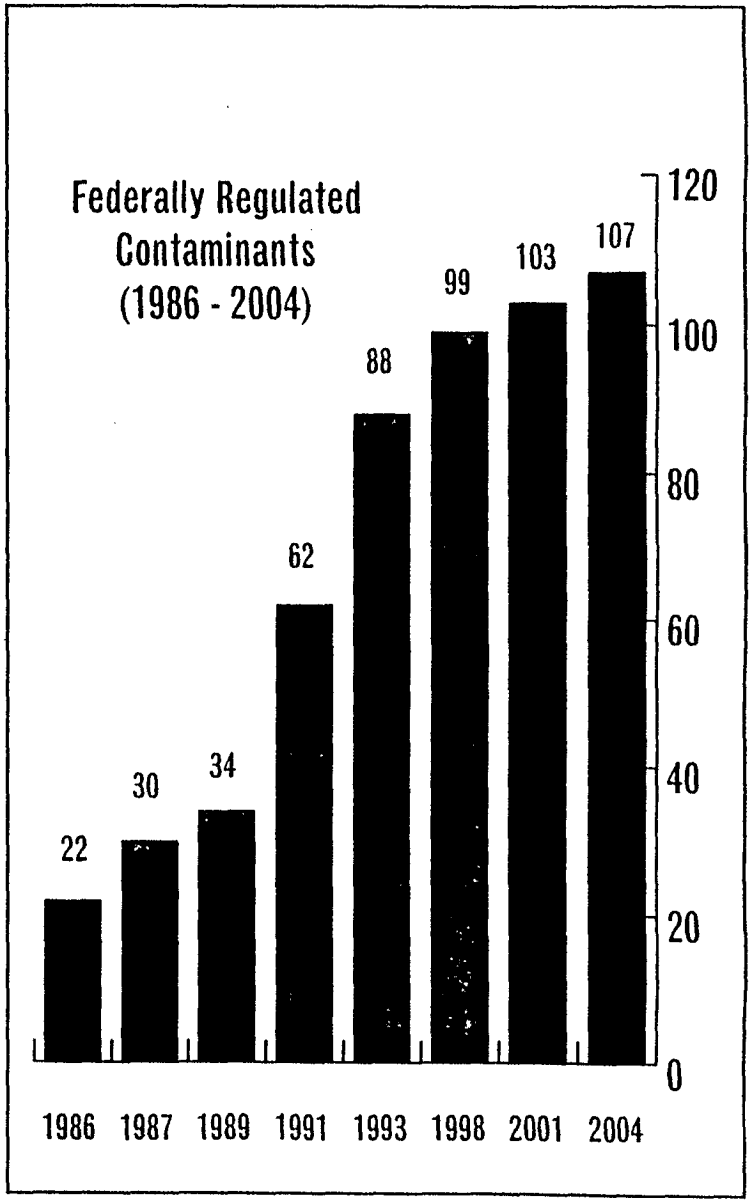
The pace of water quality regulations increased dramatically, focusing even greater concerns about the quality of Delta water.

Two-thirds of California's population receives all or a portion of its drinking water from the Delta.



1989: A Water System On The Edge

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Today: Environmental Rebound

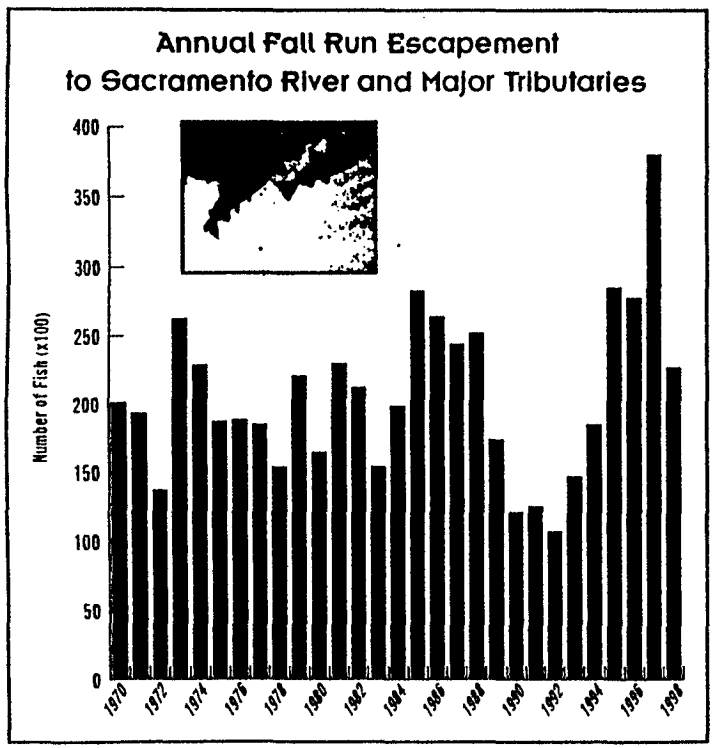
Fisheries Are No Longer In Crisis

The nation's most aggressive fishery restoration effort and favorable hydrology have significantly improved the picture for Delta fisheries. The populations of native fish species at risk from water project operations have either stabilized or are on the rise.

None of these fish species is now facing a precipitous decline in abundance.

Populations of Key Fisheries Are Increasing

- The return rate of fall-run Chinook salmon on the Sacramento River is among the highest in 30 years.
- Stocks of winter-run, spring-run and San Joaquin fall-run Chinook salmon are also increasing.

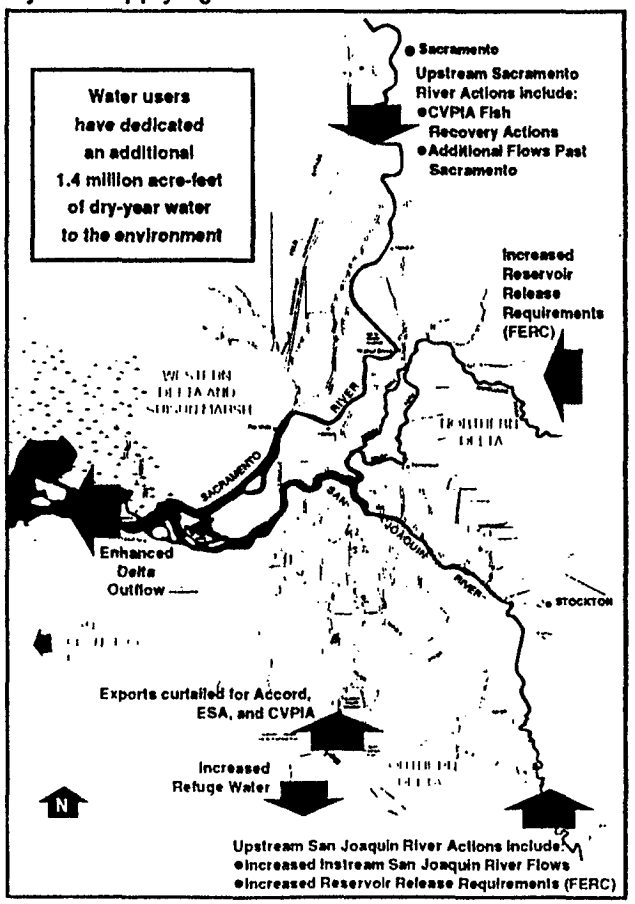


California Has Launched Unprecedented Restoration Programs

Dedicated dry-year flows for environmental purposes have been increased by 1.4 million acre-feet, including additional deliveries to refuges.

Millions of acre-feet of water and billions of dollars for habitat restoration have been dedicated to improve these fisheries.

Projects Supplying Additional Flows to the Environment



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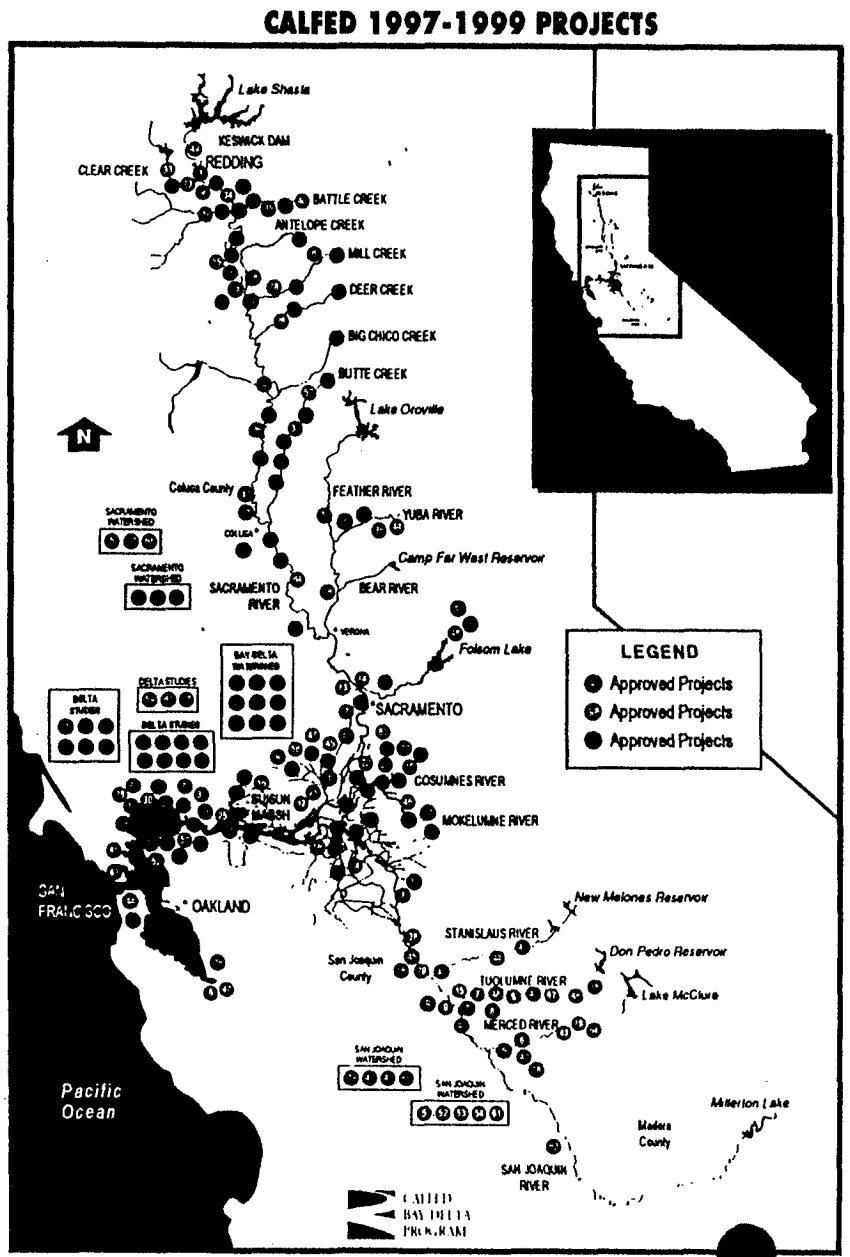
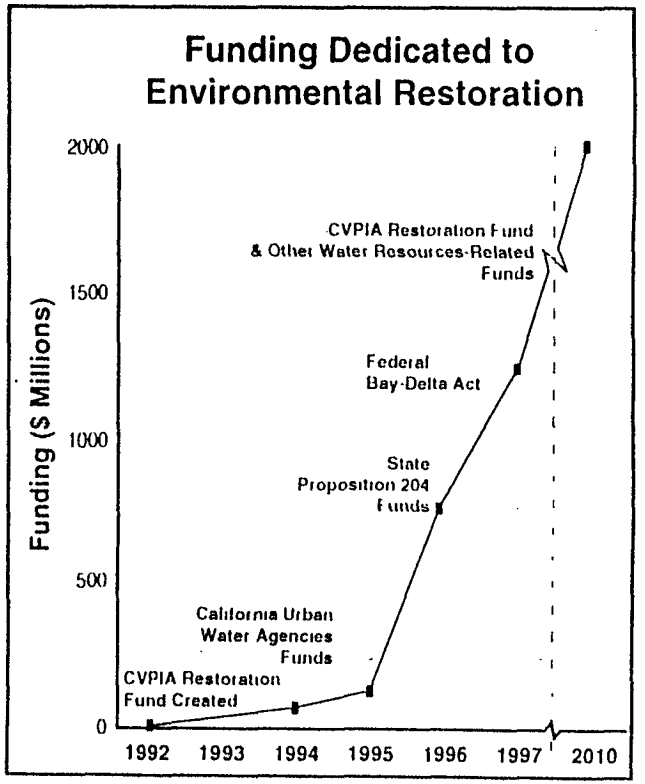
California Is In the Midst Of Implementing The Largest Habitat Restoration Program Ever Conceived



Largely as a result of the water community's initiative, $2 Billion is now committed to ecosystem restoration through 2010.

More than 250 ecosystem improvement projects throughout the Bay-Delta watershed are in various stages of implementation. Hundreds more are planned for implementation in the future.



Today: Environmental Rebound

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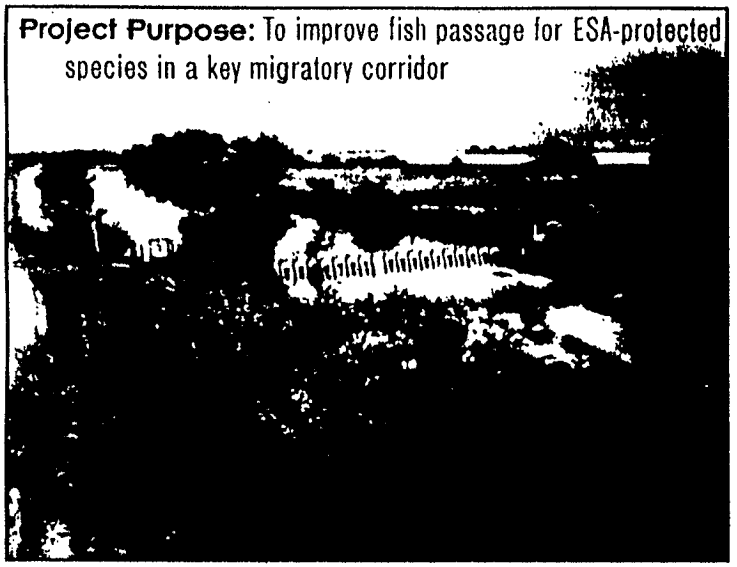
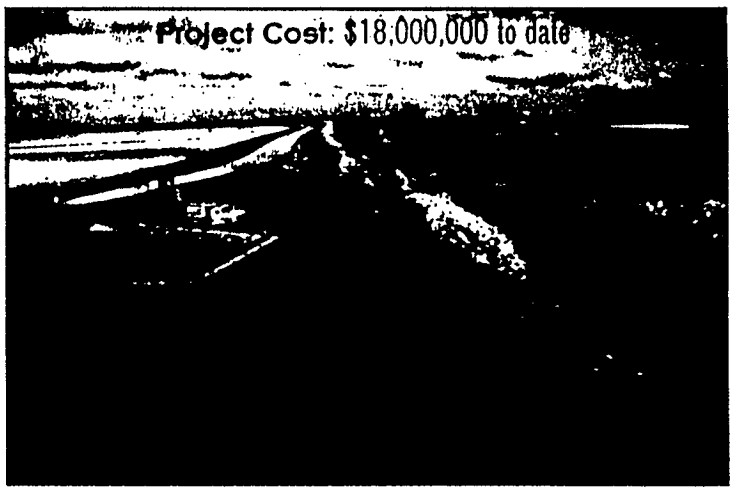
Case Study: Butte Creek Projects - Restoring 37 Miles of Fish Habitat



Western Canal Diversion - Before...



...and after removal of the dam.

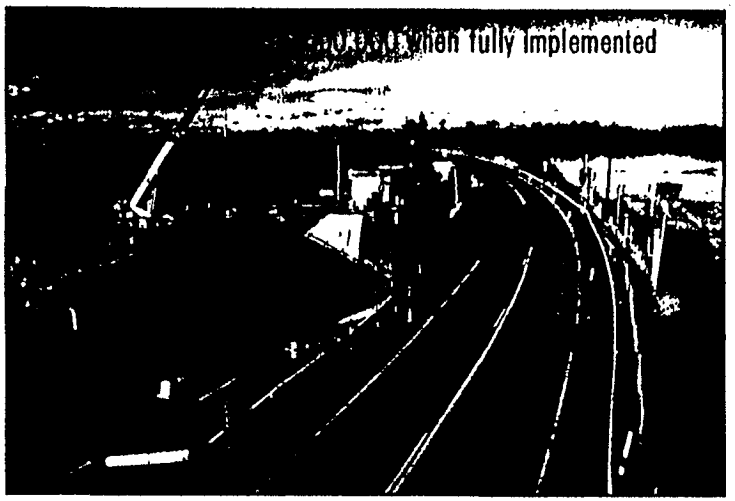
Project Outcome: Removed 4 dams, restored 37 miles of habitat on Butte Creek, constructed state-of-the-art distribution system for farmers.

20,000 spring-run Chinook salmon returned versus only a few hundred in previous years.

Case Study: Sacramento River Fish Screens - Offer Safe Passage For Salmon

Fish screens increase fish survival.

Project Purpose: To increase survival rates of migratory fish on the Sacramento River by screening diversions.



Installation of consolidated fish screens for Princeton-Codura.

Project Outcome: Once fully implemented, over 75% of all diversion volume from the Sacramento River will be screened.

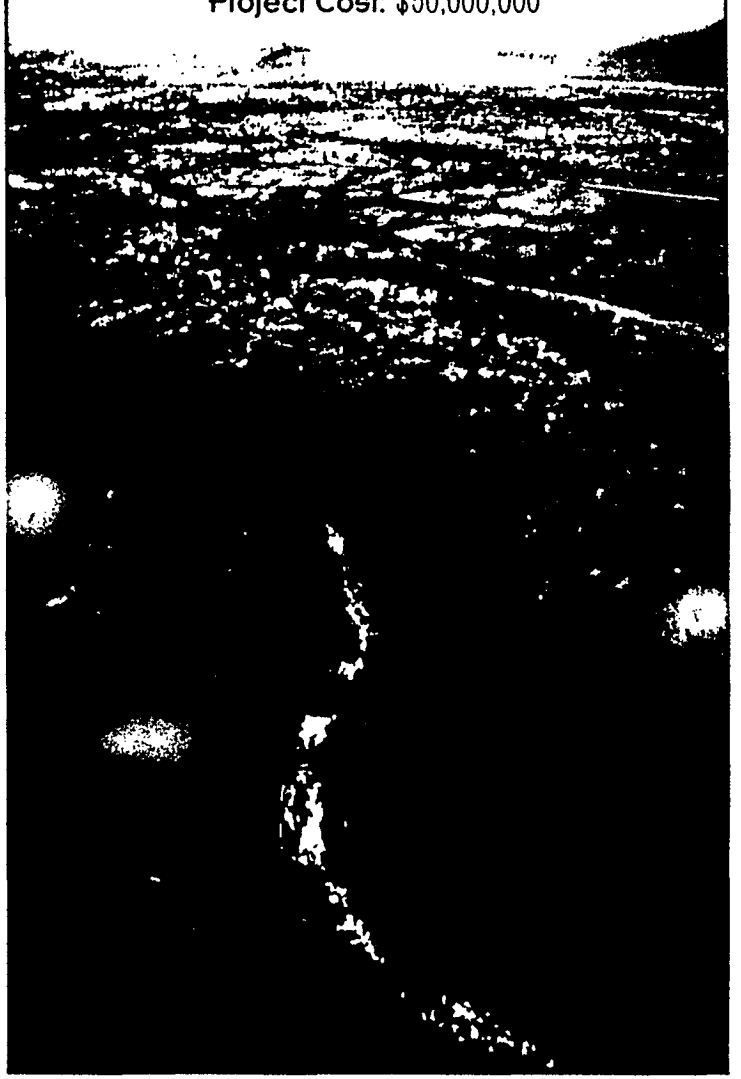
Case Study: Battle Creek - Re-Opening Access to Prime Habitat

Project Purpose: Re-establish natural conditions currently obstructed by hatchery and hydro-power operations.

Project Outcome: Will re-open 42 miles of prime habitat rich in cold spring flows for winter-run and spring-run salmon, and steelhead.

Project Cost: $50,000,000

A diversion on Battle Creek - barriers to be removed.



Aerial view of Battle Creek. Forty-two miles of ideal salmon habitat inaccessible for half a century.

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Rivers on which case study projects are occuring.

Today: Environmental Rebound

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The Bay/Delta Accord: Promises Made

In December 1994, major water exporters signed the Bay/Delta Accord, and agreed to give up 1.1 million acre-feet of dry-year water supplies in exchange for future supply certainty.

Quotes:

President Clinton:

"The (Bay/Delta Accord) is an innovative plan that protects both water quality and water supplies... and that provides the certainty necessary for water users."

President Bill Clinton, Dec. 15, 1994

Secretary Babbitt:

"A deal is a deal, and if it turns out there's a need for additional water, it will come at the expense of the federal government..."

SF Chronicle, Dec. 17, 1994

Since the Accord, water supply losses have continued to mount - despite a string of five wet years.

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The Bay-Delta Accord: Promises Broken

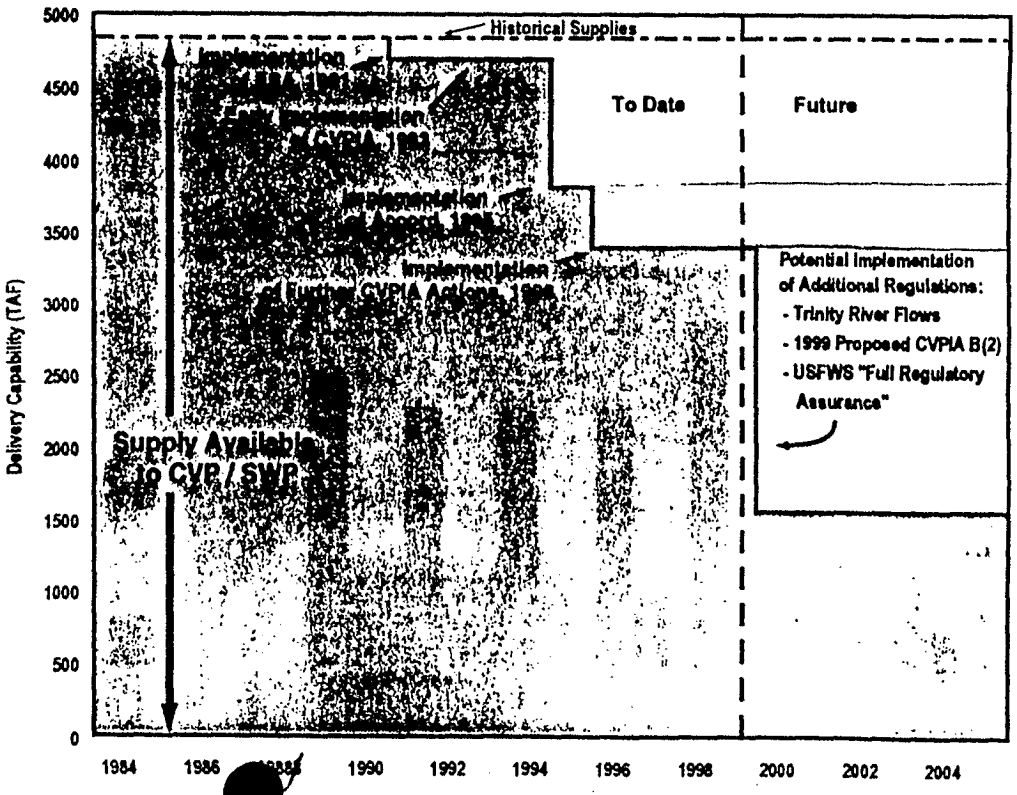
Over the past decade, Californians have faced a zero-sum game.

- Water gains for fish have directly translated into water losses for California's economy.
- Especially hard-hit have been 22 million Californians and millions of acres of farmland that rely on water deliveries from the Delta.
- Cumulative water losses to these Californians now total 1.4 million acre-feet, almost one-third of previously available dry-year supplies.
- Additional proposed federal actions threaten to more than double these supply losses.

Opportunities

- coordinated ops
- State bond
- Fed approps
- EWA/WMDT

Trend in Combined CVP / SWP Drought Period Delivery Capability



Looming Water Supply Crisis

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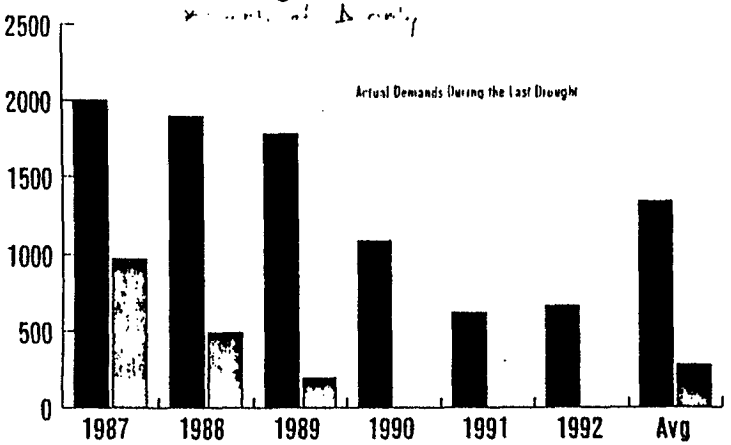
What Does It Mean For the Next Drought?

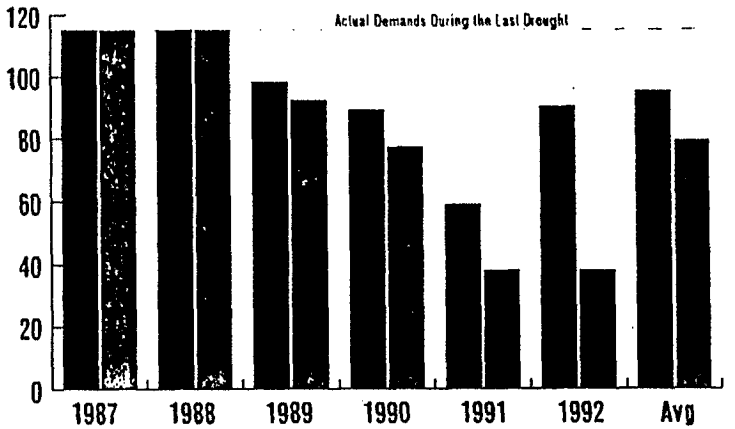
Central Valley Project Customers

CVP Agricultural Customers



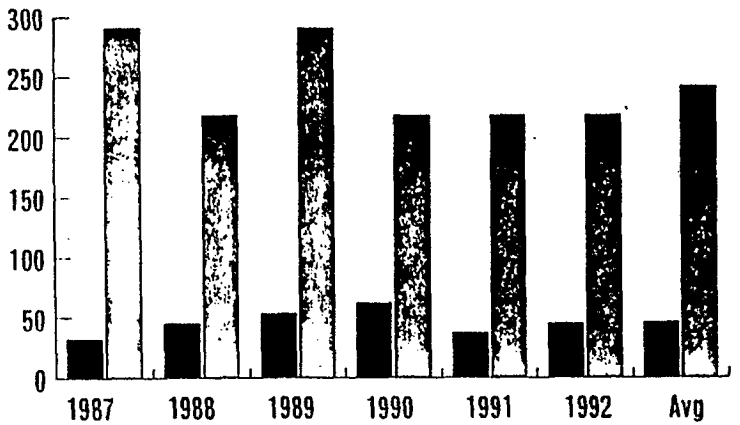
Agricultural customers receive zero deliveries for three consecutive years.

CVP Urban Customers



Urban customers receive less than 50% of supplies for two consecutive years.

CVP Refuge Deliveries



Refuge deliveries increased five-fold due to Interior administrative decisions.

Actual Deliveries During the 1987-1992 Drought

Current Delivery Capability in a repeat of the 1987-1992 Drought

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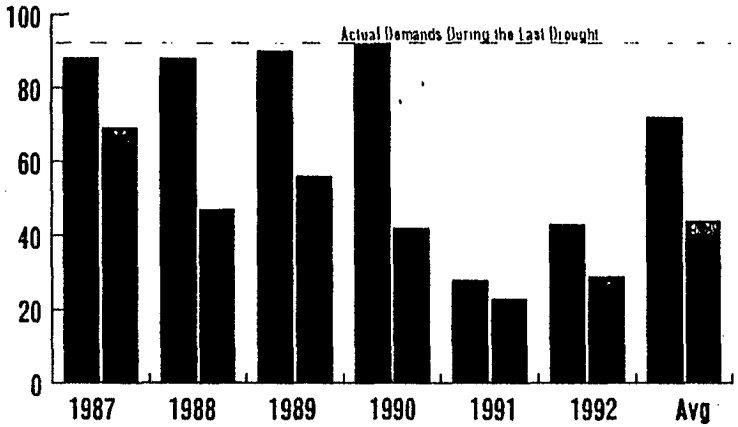
What Does It Mean For the Next Drought?

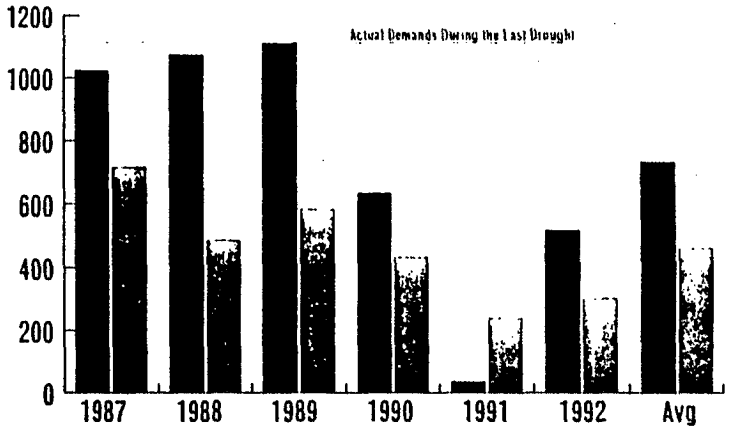
State Water Project Customers

SWP Deliveries to Santa Clara Valley Water District



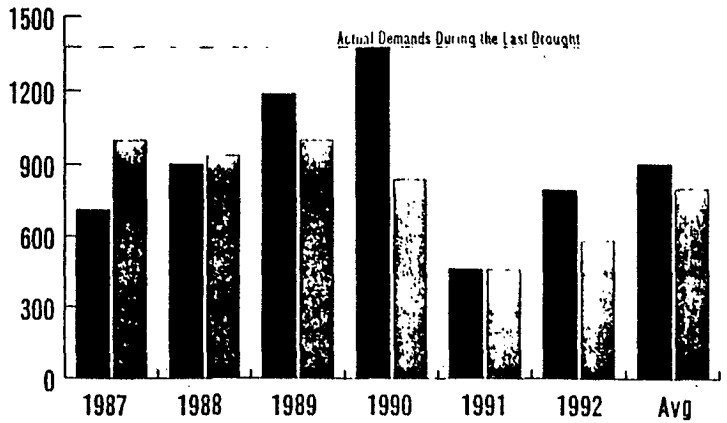
Silicon Valley economy faces a double hit: additional SWP cuts of nearly 40% on top of reduced CVP supplies.

SWP Deliveries to Kern County Water Agency



Nation's fourth-largest agricultural producing county loses an additional 1.5 MAF of supply over the course of the drought.

SWP Deliveries to Metropolitan Water District



Southern California economy faces an additional half-million acre-feet shortfall in some drought years.

Actual impacts would be more severe under pending federal actions.

Looming Water Supply Crisis

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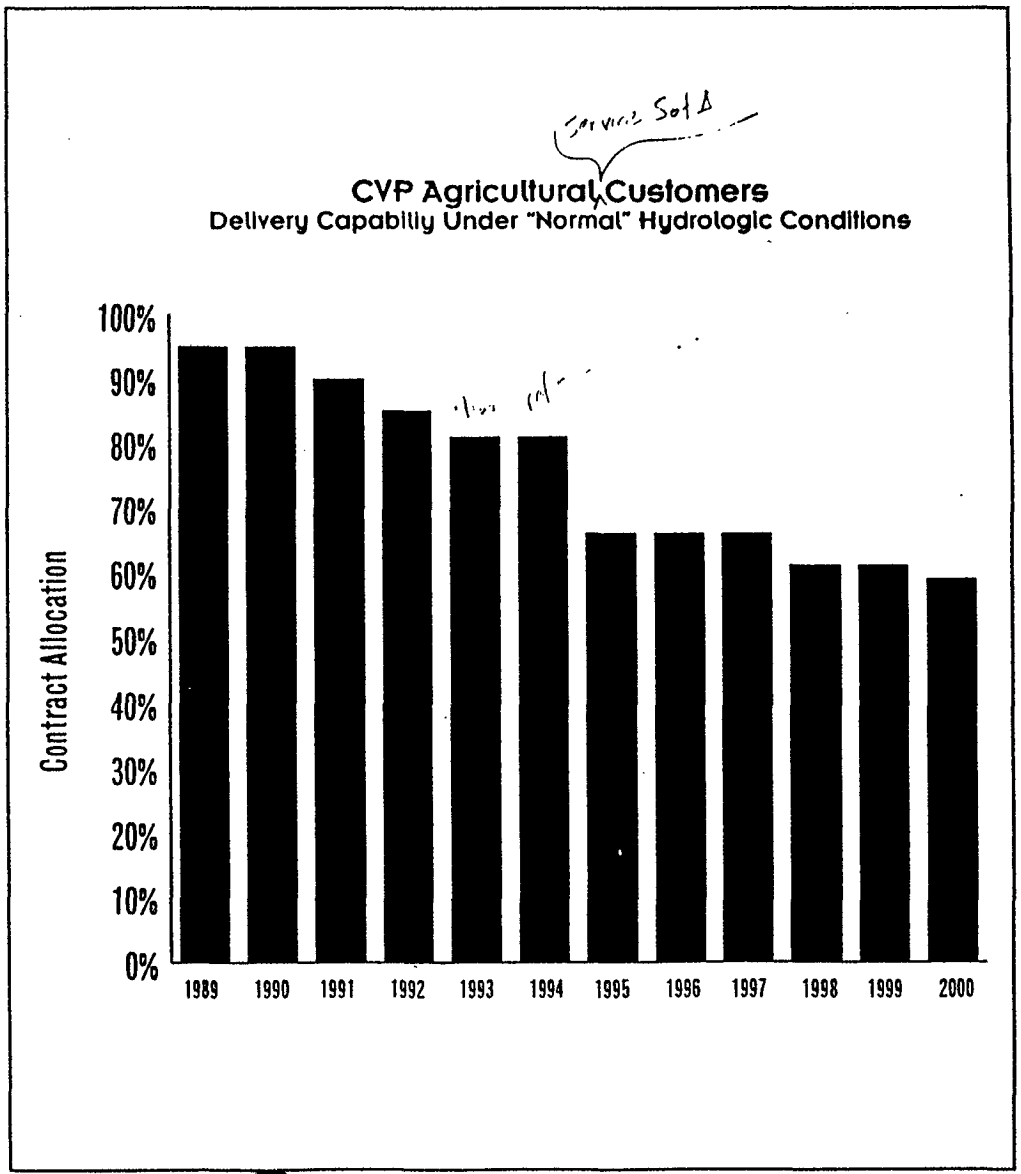
Looming Water Supply Crisis

Water Supplies At Risk Even In Normal and Wet Years

- Regulatory impacts have reduced available supplies, even under normal hydrologic conditions, by more than one-third.



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FRIDAY
June 18, 1999

The Sacramento Bee

Protection of fish puts farm, Bay Area water at risk

By Nancy Vogel
Bee Staff Writer

Efforts to protect a small threatened fish have suddenly blown into a crisis that could disrupt water supplies to San Joaquin Valley farms as soon as next week and to the Silicon Valley later this summer, federal and state water officials said Thursday.

[illegible] have forced water project operators to pump less than half what they normally would from the Sacramento-San Joaquin Delta, California's primary source of water, to keep threatened Delta smelt from being killed in pumping plants.

The situation hit a critical point Thursday when the biologists refused to ease the pumping restrictions, which have already lasted two weeks longer than usual near pumping plants.

"What has emerged in the last 48 to 72 hours is really a water supply crisis," said Steve Macaulay, who represents 20 million water users as general manager of the State Water Contractors.

Demand for water is quickly outstripping the relative trickle flowing south from the Delta, water project officials said.

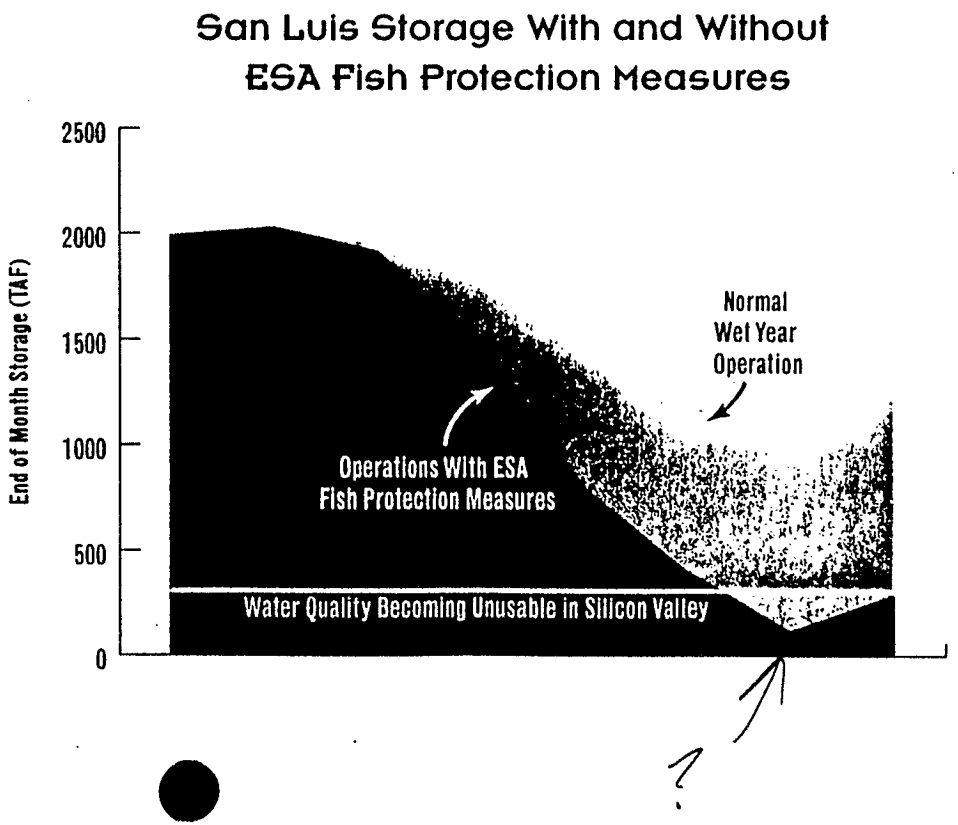
[illegible] plants and out to the Pacific Ocean will hurt the San Joaquin and Southern California supplies not just next week but for months to come, they said.

"This is a serious situation," said Larry Gage, chief of operations for the State Water Project. "It has the potential at this point of impacting both federal and state water project customers and possibly [illegible]."

[illegible] voirs mean cities there have sufficie supplies for the near future, experts sa But if Delta pumping doesn't increa within days, San Joaquin Valley farme could be forced to watch crops wither ir year of abundant rain and snow, and t Santa Clara Valley Water Agency, supp er to Silicon Valley, may face comple loss of its chief water supply.

- For sixty days in 1999, the fifth year of a record wet period, operations to protect the Delta Smelt put California's urban and agricultural economy at risk.

- More than one-half million acre-feet of San Luis Reservoir storage was used to protect Delta Smelt.



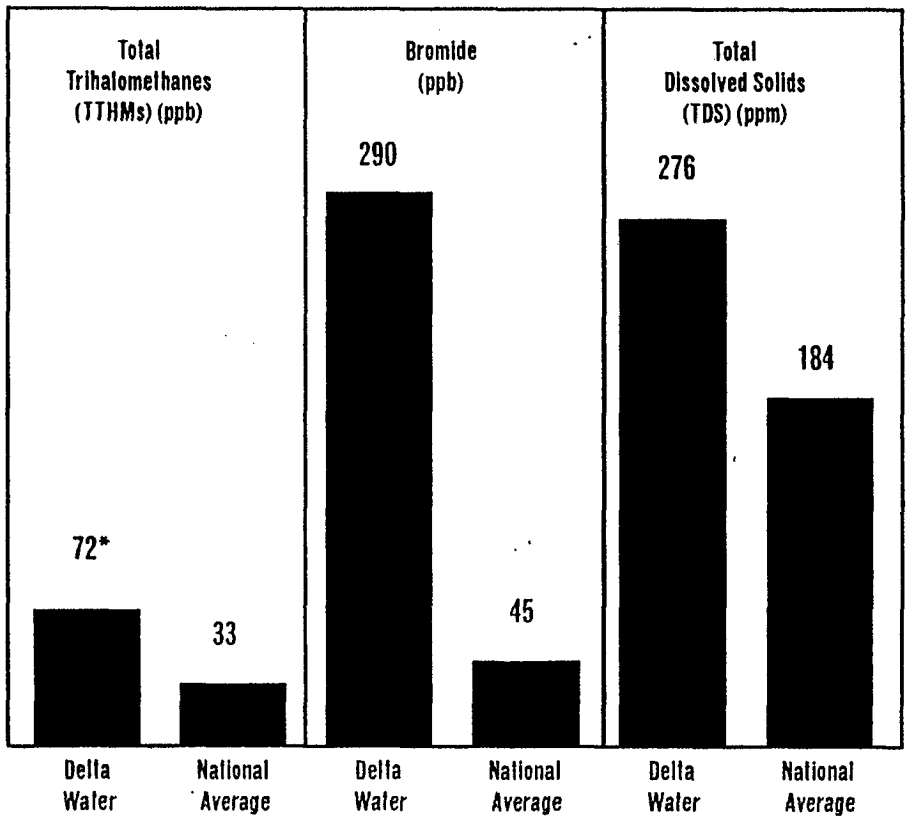
Looming Water Supply Crisis

Delta Water: For Urban Water Customers, It's An Issue Of Quality

The Delta as a source of water ranks near the bottom in terms of water quality nationwide.

- Bromide and TTHMs both raise public health concerns because of possible links to cancer. Both are found in far higher concentrations in Delta water supplies than in other sources across the nation.
- High concentrations of TDS impede efforts to recycle and reuse water and degrade groundwater basins.

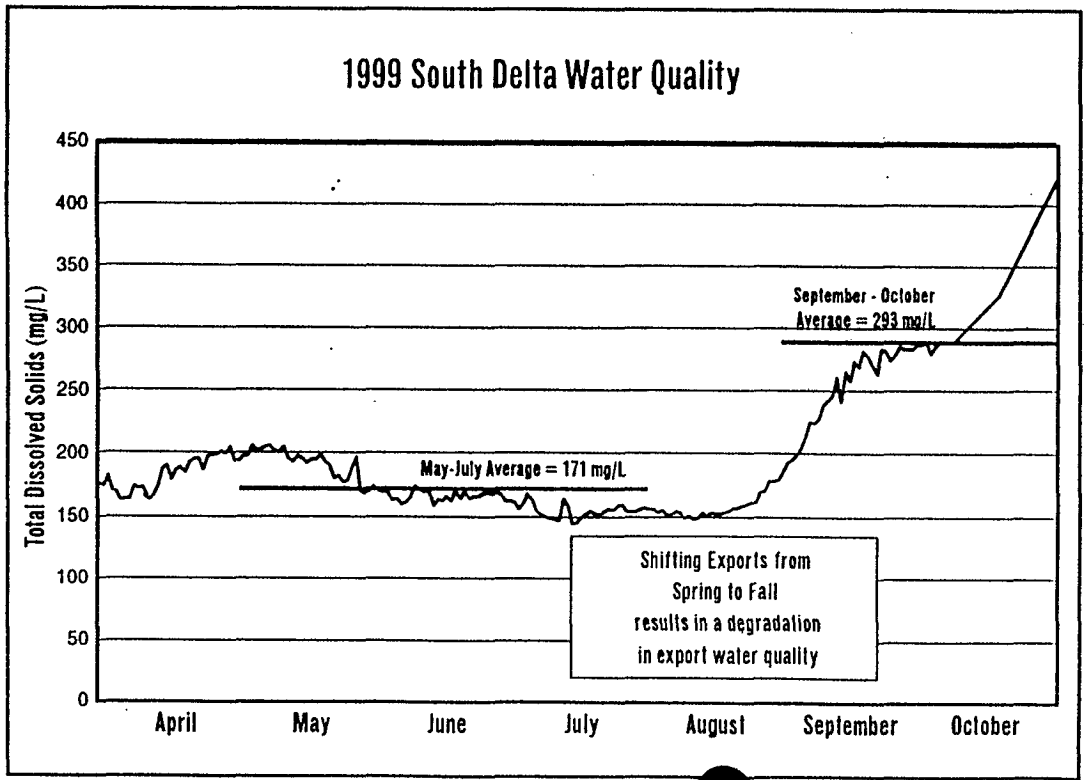
Comparison of Delta Water Quality to National Average (Medians)



(*Measured at Mills Filtration Plant, Riverside, CA)

Fishery Protection Actions Conflict With Drinking Water Quality Protection

- High levels of THM precursors and salinity are found in untreated Delta water.
- Actions required to protect fisheries are often at odds with public health goals related to water quality.
- Failure to improve Delta water quality relative to existing levels could increase demands on the Bay-Delta system by up to 400,000 acre-feet annually.



- Regulatory agencies propose to shift exports from spring to fall to protect fish.
- For example, in 1999 shifting exports from spring to fall increases TDS by 70%.

Water Quality Degrading

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Californians expect their leaders to provide sufficient supplies of good quality water.

Recent polls document that the public supports investments that provide:

- Safe, reliable drinking water.
- Environmental protection.
- Reliable water supplies to sustain the California economy.

We have already laid the foundation for such investments:

- **Proposition 13:** $1.97 billion water bond for March 2000 ballot.
- **Proposition 204:** $995 million for ecosystem and water quality approved by voters in 1996.
- **Federal funding authorization:** $430 million for ecosystem and other CALFED common programs.
- $20 million in general fund FY 2000-2001 earmarked to study storage.
- Billions invested in conservation, reclamation, and south-of-Delta storage.

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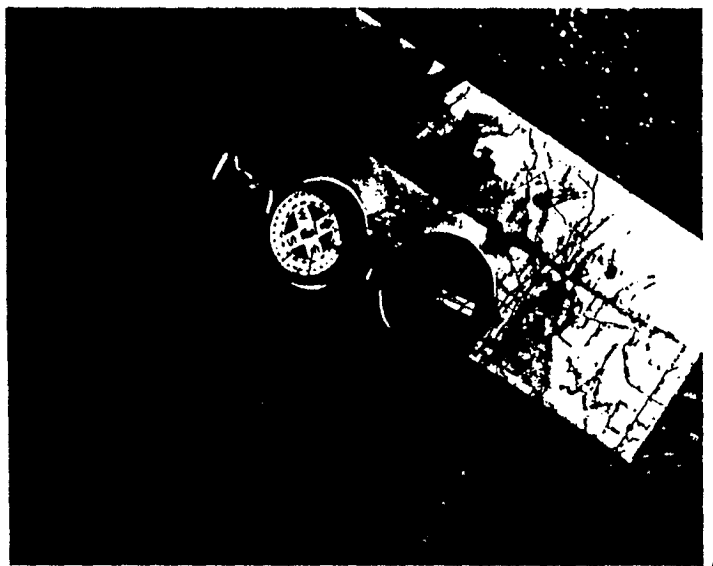
ACTIONS NEEDED TO AVERT THE LOOMING CRISIS

Immediate investments in water system capacity:

- Complete South Delta facilities.
  - Increase Delta pumping capacity.
  - Install fish barriers.
  - Install salinity barriers.
- Implement groundwater/storage programs south of the Delta.
- Implement programs to improve water quality in and from the Delta.
- Develop a balanced, workable Environmental Water Account (EWA).
- Shift Delta management from regulatory mandates to flexible operations for multiple benefits.
- Plan and build appropriate surface storage projects.



Outlook: Where Do We Go From Here?

FRIDAY
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The Sacrame

Protection of fish puts farm, Ba

By Nancy Vogel
Bee Staff Writer

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The situation hit a critical point Thursday when the biologists refused to ease the pumping restrictions, which have already lasted two weeks longer than usual because smelt are lingering in harm's way near pumping plants.

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Demand for water is quickly outstripping the relative trickle flowing south from the Delta, water project officials said.

Allowing so much water past pumping

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nto Bee

ıy Area water at risk

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"This is a serious situation," said Larry Gage, chief of operations for the State Water Project. "It has the potential at this point of impacting both federal and state water project customers and possibly right away."

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Please see WATER, page A